



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,539	06/26/2003	Kie Y. Ahn	303.533US2	5770

21186 7590 03/23/2005

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER

MITCHELL, JAMES M

ART UNIT PAPER NUMBER

2813

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary	Application No. 10/606,539	Applicant(s) AHN ET AL.	
	Examiner James M. Mitchell	Art Unit 2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 47-50, 55, 60, 61, 67-69 and 76-78 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 47-50, 55, 60, 61, 67-69 and 76-78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/18/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is in response to the election made January 18, 2005.

Election/Restrictions

Applicant's election without traverse of Species III in the reply filed on January 18, 2005 is acknowledged. Claims 51-54, 56-59, 62-66, 70-75, 79 and 80 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 47-50, 55, 60, 61, 67-69 and 76-78 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 8-11 and 14-18 of U.S. Patent No. 6,821,802 in view of JP05129666.

While U.S. Patent No. 6,821,802 does not disclose a peltier element coupled to a flip chip, JP05129666 utilizes a peltier element coupled to a flip chip, it would have

been obvious to one of ordinary skill in the art to incorporate a peltier element coupled to the flip chip of U.S. Patent No. 6,821,802 in order to provide heat dissipation as taught by JP05129666.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 47, 55, 66, 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beaman et al. (U.S 5,371,654) in combination with Horiuchi (JP05129666).

Beaman (Fig 2) discloses a method for forming an electronic packaging assembly. comprising: forming a silicon interposer (8; Col. 3, Line s42-46), wherein the interposer includes micro-machined vias (20; i.e. made by a machine) formed through the silicon interposer; attaching a number of flip chips (36) to the silicon interposer, wherein the flip chips couple to the micro-machined vias (Fig. 2);

Beaman a second chip (36), but does not show coupling a metal-semiconductor, peltier element to at least one of the flip chips.

Horiuchi (Fig.1) utilizes a metal-semiconductor peltier element coupled to a flip chip (20,22,24).

It would have been obvious to one of ordinary skill in the art to incorporate a metal-semiconductor peltier element coupled to the flip chip of Beaman, in order to

provide temperature control such as heat dissipation as taught by Horiuchi (English Abstract).

Claims 48-50 and 60-61, 68, 69, 77 and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beaman et al. (U.S 5,371,654) and Horiuchi (JP05129666) as applied to claim 47, 55, 67 and 76 and further in combination with Wenzel et al. (U.S 6,150,724).

Beaman further discloses a capacitor (i.e. dielectric, 8, between two conductive material, 20)).

Neither Beaman or Horiuchi appear to show the chips as a microprocessor and memory or DRAM.

Wenzel (Fig. 4) discloses forming its chips as a microprocessor and memory or DRAM.

It would have been obvious to one of ordinary skill in the art to form the chips as memory, microprocessors and drams in order to provide functionality more functionality for an electronic device (i.e. computer) as taught by Wenzel (Col. 3, Lines 34-49).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone

Application/Control Number: 10/606,539
Art Unit: 2813

Page 5

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jmm
March 21, 2005

Craig A. Thompson
CRAIG A. THOMPSON
PRIMARY EXAMINER